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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,527	11/21/2001	Walter R. Smith	MFCP.88141	3082
45809	7590	04/28/2005	EXAMINER	
SHOOK, HARDY & BACON L.L.P. 2555 GRAND BOULEVARD KANSAS CITY, MO 64108-2613			CHOW, CHIH CHING	
			ART UNIT	PAPER NUMBER
			2192	

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/990,527

Applicant(s)

SMITH, WALTER R.

Examiner

Chih-Ching Chow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is responsive to amendment dated January 10, 2005.
2. Per Applicants' request, specification, drawing, and claims 1, 9, 10 have been amended, claims 13 and 14 are newly added.
3. Claims 1-14 remain pending.

#### *Response to Amendment*

4. Applicants' amendment dated 01/10/2005, responding to the 10/21/2004 Office action provided in the objection of Specification. The examiner has reviewed the updated Specification respectfully.
5. The objection to the specification is hereby withdrawn in view of Applicants' amendment to the specification.
6. Applicants' amendment dated 01/10/2005, responding to the 10/21/2004 Office action provided in the objection of Drawings. The examiner has reviewed the updated drawings, Figure 5, respectfully.
7. The set of formal drawings filed concurrently with the above-mentioned amendment is accepted by the Examiner.

#### *Response to Arguments*

8. Applicants' arguments for Rejection Under 35 USC § 112 (2<sup>nd</sup>) paragraph have been fully considered respectfully by the examiner.
9. The amended new claim 14 has clarified and explained the 'unwanted information', therefore the 35 USC § 112 (2<sup>nd</sup>) paragraph rejection is hereby withdrawn even claim 7 and claim 8 are not amended.

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10. Applicants' arguments for Rejection Under 35 USC § 102 (e) and 103 (a) have been fully considered respectfully by the examiner but they are not persuasive. Applicants mainly argued the following items:

- *Independent claims 1 and 9-11 of the subject application recite "removing each text string from the program". The examiner, on pages 5-6, 7-8, and 10 of the Office Action, cites O'Brien as discussing the same.*

Examiner's Response: In response to applicant's argument: "However, neither the examiner nor O'Brien indicate that the data tags may be the same thing as the programmer's comments." - Neither does the current application indicates that the tags are programmer's comments; current application only recites "a unique tag corresponding to each text string". In O'Brien's disclosure, the control tags are associated with the data tags, as applicant's agreed, "the former indicating a location in the source code, and the latter providing information about an event by the control tag with which it is associated", therefore when an event has occurred, it would locate the designated location and any related information, including any comments, that a programmer has set beforehand; see O'Brien's Fig. 12, an example of an output from tagged location. Applicant also argues that "When O'Brien's C preprocessor 66a removes the programmer's comments, it does not replace the comments with anything, leaving the program devoid of any means of referring back to the comments if later debugging is required. While the location of a process may be identifiable during debugging using the control tags, any relevant comments that would have been associated with that process would have been deleted." -- When O'Brien removes the programmer's comments, it inserts tags with instrumentation data, see O'Brien's Fig. 4, item 62, and column 12, lines 40-41, "The C parser 69a instruments the file produced by the C preprocessor 66a with instrumentation tags 62", therefore, the applicant's argument about "While the location of a process may be identifiable during debugging using the control tags, any relevant comments that would have been associated with that process would have been deleted" is not correct. Finally, applicant argued "Clearly, O'Brien does not disclose or suggest including/coding a unique tag to each text string and removing each text string from the program. In addition, the examiner did not cite to Treu or Biegel as discussing the same. Therefore, independent claims 1 and 9-11 are patentably distinguishable over the cited references, taken alone or in combination." -- As the Examiner pointed out

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above, O'Brien removes any comments/text strings that are not necessary to know by the users, but insert instrumented tags for debugging purposes. Therefore, independent claims 1 and 9-11 are anticipated by O'Brien's disclosure, they are not considered a novelty in the art.

- *Lack Of Motivation To Combine The References*

Examiner's Response: One of the focuses for current application is for 'debugging' purposes, see current application's Abstract, "the invention involves a system and method that allows software developers to more effectively diagnose bugs existing in software programs that may result in a crash of the program." And 'Background Of The Invention', paragraph 4 of the current application, "Software developers make every effort to debug the software programs before the programs are sold in the retail environment." Debugging is also a feature of O'Brien's disclosure, see column 9, lines 9-10, "The language independent instrumenter 63 eliminates the conventional dependence in code instrumenters, debuggers, and other instrumentation tools upon the output file format of a specific compiler's tool set for construction of an instrumentation symbol table." Biegel puts a very big portion of his invention in a debug system - see section 2.4, "Debug System". Treu also trying to improve a diagnostic/debug system, see first paragraph under 'Field of The Invention', "This invention relates to the field of data processing, and, more particularly, to an improved diagnostic system and interface for a personal computer." - Since all O'Brien, Biegel, and Treu try to solve the same problem as the current applicant does, the Examiner sees a very strong motivation to combine any of their inventions together.

11. Examiner is maintaining the 35 USC § 102 (e) and 103 (a) Rejections. For the Applicants' convenience the claims are listed as following, including the amendments requested by the Applicant.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1, 3, 7-10, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,311,327 to Stephen Caine O'Brien et al. (hereinafter "O'Brien").

**CLAIM**

1. A method for obtaining information regarding events to be taking place within a software program to be used by a customer on a computing device, comprising: including, for each of a number of selected events, an indicator within the software program that records the selected event, the indicator including a text string descriptive of the selected event;  
(a) assigning and including a unique tag corresponding to each text string;  
(b) creating an index mapping each tag

**O'Brien**

In O'Brien, column 4, lines 9-12, "Data tags are always associated with a specific control tag, and they have a data field that provides information about an **event** identified by the **control tag** with which it is associated." (the *selected event identified by an indicator*).

For items a and b, see O'Brien, column 10, lines 49-60, "The parser 311 and the tag instrumenter 69 may be added as a new routine to the modified compiler 66 to insert tag statements at appropriate

to the corresponding text string; and

(c) removing each text string from the program prior to transferring the program to a customer.

**points....** The language-independent analyzer 321 may also be constructed as an information entry application program interface ("API"), according to an embodiment of the invention. An API is a library of **called procedures** used by an **application program** *(in a software program)*. Further, in O'Brien, column 11, lines 6-11, "the API 323 may provide a set of commands for retrieving information from the database 65 using a **tag value** as a **search key** *(mapping index)*. Depending on the significance of the **tag value**, the API 323 may return a symbol name corresponding to the **tag**, a **text string** *(a unique tag corresponding to each text string)*. O'Brien teaches the concept of using a **unique tag** as an **index key** to a **corresponding text string** in a software program; the tag value can be inserted in **selected event** *(appropriate point, called procedure)*. For item c, see O'Brien, column 12, lines 3-5, "The C preprocessor 66a **removes information from the source code** 60 *(removing each test string prior to transferring the program to a customer)* such as comments that may have been added by the source code's programmer."; -- the information can include the text string from the program; and further, in column 22, lines 15-19, "A probe, such as the probe tip 12, represents but one mechanism for detecting **tags** during a program's execution. Other detection mechanisms

include **writing tag values to a file** which for **subsequent analysis and capturing tag values** passing during an **external function call.**" (see Fig. 1), this sentence implies that in O'Brien's art, the text string does not reside in the application program, the application program only contains the **tag values**. Therefore, there is no need to remove text string before transferring the program to a customer.

3. The method of claim 1, wherein the indicator is a function call.

For the feature of claim 1 see claim 1 rejection. O'Brien teaches "capturing **tag values** passing during an **external function call.**" (column 22, line 19). Therefore, the indicator (*tag value*) can be a function call.

7. The method of claim 1, further comprising including within selected indicators an identifier, the identifier identifying information unwanted by a software provider.

For the feature of claim 1 see claim 1 rejection. O'Brien's has disclosed the 'probe tip' (number 12 in Fig. 1) which is a **separate unit** from the computer, further, in column 7, lines 27-30, "After the probe chassis 20 has performed various **tabulation and data reduction functions** (*filtering out*) on the data from the probe tip 12, it outputs appropriate data to the host system 40 through the local area network cable 30". The probe contains an **identifier**, which will be used to **identify certain text string (identifying information)**, the text string is not used in the application program; this also means the identifier identifying information



(matching text strings) are not required (*unwanted by a software provider*) for program execution, see 35 USC 112 rejection item 8 above.

8. The method of claim 7, further comprising:

filtering out, prior to transmittal of the file to the repository, selected data indicated by the identifier as unwanted information.

For the feature of claim 7 see claim 7 rejection. Claim 7 rejection covers the 'filtering out' feature. In O'Brien, column 1, lines 48-51, "As another example, each tag statement may send **tag identifying data to a disk file** (*unwanted information; not delivered in software product*). As still another example, an array can be reserved in memory, with each array element corresponding to a tag inserted in a respective location in the source code." (*repository*).

9. A computer-readable medium having computer-executable instructions for performing a method for obtaining information regarding events to be taking place within a software program to be used by a customer on a computing device, comprising:

searching for a text string within the software program descriptive of a selected event;

assigning and including a unique tag to each text string found;

creating an index mapping each tag to the corresponding text string; and

removing each text string from the program.

Same as claim 1 rejection.

10. A computer system having a processor, a memory, and an operating environment, the computer system operable to execute a method for obtaining information regarding events to be taking place within a software program to be used by a customer on a computing device, comprising:

searching for a text string within the software program descriptive of a selected event;

assigning and including a unique tag to each text string found;

creating an index mapping each tag to the corresponding text string; and

removing each text string from the program.

Same as claim 1 rejection.

14. The method of claim 7, wherein the unwanted information is sensitive or personal information about the customer.

For the feature of claim 7 see claim 7 rejection. See O'Brien, column 12 lines 3-5, "The C preprocessor 66a removes information from the source code 60 such as comments that may have been added by the source code's programmer." - the information can be any information which is unrelated to the function implementation, such as sensitive or personal information about the customer.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2, 11, and 12-13 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,311,327 by Stephen Caine O'Brien et al.

(hereinafter "O'Brien"), in view of US Patent No. 5, 608, 720 by Charles H. Biegel

et al. (hereinafter "Biegel").

#### CLAIM

2. The method of claim 1, further comprising:

(a) creating, on the computing device, a file of the recorded events including the unique tag for each event;

(b) receiving, from the computing device, the file of the recorded events;

(c) processing the file, by replacing into the file, the text string corresponding to each tag within the file; and

(d) outputting a text string record of the events which took place within the software program, thereby providing a software provider a text record of the events taking place in the program to determine how the program may have failed.

#### O'Brien / Biegel

For the feature of claim 1 see claim 1 rejection. For items a, b, and c see claim 1 rejection. For item d, O'Brien teaches providing text record when an error has occurred, in column 17, lines 22-26, "When an error is identified, a set of data and a control tag are written to indicate the error. The information present in the tags include an error identifier, the address of the block in error and its size (if any), the caller identifier(s) of the block's allocator and deallocator (if any), and the kind of allocator call begin attempted when the error was discovered."; but O'Brien does not mention the 'program may have failed' specifically. However, Biegel teaches this feature in an analogous art. In Biegel, column 28, lines 20-24, "An error identifier for an error is a code that is

used to **decode the error** by offline tools in an output driver in the RDT (*coding and decoding*). This code is used to associate the error with a printable ASCII string.", column 48, lines 37-38, "If a **service operation fails**, the **failure** is translated into the most appropriate **TL1 error code**."

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement O'Brien's disclosure of the tagging of the application program by the tagging the program failures further taught by Biegel, for the purpose of aid in system debugging (see Biegel, column 29, lines 34-35).

11. A method for recording program information, by a software provider, about events to be taking place within a software program executing on a computer to be used by a customer, comprising:

(a) including, for each of a number of selected events, an indicator within the software program that records the selected event, the indicator including a text string descriptive of the selected event;

(b) coding the text string with a unique tag corresponding to each text string;

(c) creating a decoding file mapping each unique tag to the corresponding text string; and

(d) removing each text string from the

O'Brien teaches all aspects of claim 11 but does not mention the 'coding and decoding' (items b and c) specifically. However, Biegel teaches this feature, see claim 2 rejection (*coding and decoding*).

program prior to transferring the program to a customer.

12. The method of claim 11, further comprising receiving, from the customer, a file of the recorded events, the file including the unique tag for each event;

decoding the file by mapping the coded tag with the corresponding text string; and

outputting a text string record of the events which took place within the software program,

thereby providing the software provider with a text record of the events taking place in the program to determine how the program may have failed.

For the feature of claim 11 see claim 11 rejection. For the rest of the feature of claim 12, see claim 2 rejection.

14. Claims 4-6, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,311,327 by Stephen Caine O'Brien et al. (hereinafter "O'Brien"), in view of US Patent No. 5, 608, 720 by Charles H. Biegel et al. (hereinafter "Biegel"), further in view of U.S. Patent no. 5,245,615 by Albert R. Treu (hereinafter "Treu").

**CLAIM**

4. The method of claim 2, further comprising:

as the program executes on the computing device, limiting the size of the file of the recorded events.

**O'Brien / Biegel / Treu**

For the feature of claim 2 see claim 2 rejection. O'Brien and Biegel teach all aspects of claim 4 but does not mention the 'limiting the size of the file of the recorded events' specifically. However, Treu teaches this feature in an analogous art. In Treu, column 4, lines 66-67, "In a preferred embodiment, error log 88 has a size of 109 contiguous bytes."

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement O'Brien and Biegel's disclosure of the tagging of the application program and tagging the program failures by limiting the size of the error log taught by Treu, for the purpose of storing predetermined error log information at predetermined locations therein. (see Treu's Abstract, lines 2-3).

5. The method of claim 4, further comprising:

in response to a failure of the program on the computing device, automatically transmitting the file to a repository accessible by the software provider.

For the feature of claim 4 see claim 4 rejection. For the 'transmitting the file to a repository' part, see claim 8 rejection.

6. The method of claim 5, wherein the failure is a crash of the program.

For the feature of claim 5 see claim 5 rejection. O'Brien and Treu teach the aspects of claim 6, except they don't mention 'crash' specifically. However, Biegel teaches the concept of crash as a failure of a program. In Biegel, column

27, lines 26-28, "4. **Crash Log**--captures a snapshot of the processor state when an irrecoverable error occurs on the processor".

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement O'Brien and Treu's disclosure of the tagging of the application program and tagging the program failures by tagging a crash condition taught by Biegel, for the purpose of capturing the state of the processor while a crash occurred (see Biegel, column 29, line 47).

13. The method of claim 2, further comprising:  
deleting the file when the program closes normally, without crashing.

For the feature of claim 2 see claim 2 rejection. O'Brien and Biegel teach all aspects of claim 13 but does not mention the 'deleting the file when the program does not have a crash' specifically. However, Treu teaches this feature in an analogous art. In Treu, column 8 last line to column line 21, "**step 176 determines if an error or failure (crash) occurred during the test.** If not, step 178 then sees if any log entry has been saved by step 174, and if one has, step 180 informs the user that a temporary error may have occurred. ... If step 176 results in a positive determination, step 184 then compares the cause of failure with the log information saved in step 174. If they compare, step 188 **deletes the resource** (e.g. by deleting a block of memory from

which the error arose) and informs the OS. Step 190 then deletes the log entry corresponding to such resource, builds an OS information log (error log status byte- bit 6) indicating the deletion and branches to step 182."

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement O'Brien and Biegel's disclosure of the tagging of the application program and tagging the program failures by removing unnecessary error log taught by Treu, for the purpose of saving memory space for storing predetermined error log information at predetermined locations therein. (see Treu's Abstract, lines 2-3).

### *Conclusion*

15. The following summarizes the status of the claims:

35 U.S.C. 102 rejection: 1,3, 7-10, 14

35 U.S.C. 103 rejection: 2, 4-6, 11, 12, 13

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the



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advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:300am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Any inquiry of a general nature of relating to the status of this application should be directed to the **TC2100 Group receptionist: 571-272-2100**. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Ching Chow

Examiner

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April 26, 2005



ANTONY NGUYEN-BA  
PRIMARY EXAMINER

CC